What is claimed is:

1. An apparatus adapted for removing gas bubbles from blood comprising:

an axially elongate shell defining a chamber,

an impeller disposed within the chamber,

a motor operably connected to the impeller,

a gas vent in fluid communication with central axis the shell,

a blood inlet port and

a blood outlet port located at a radial periphery of said shell.

2. The apparatus of Claim 1 wherein said blood inlet port is positioned tangentially to said shell.

3. The apparatus of Claim 1 wherein said shell includes an axially elongate baffle interposed between the chamber and the gas vent.

4. The apparatus of Claim 1 wherein said motor is electrically driven.

5. The apparatus of Claim 1 wherein said motor and impeller are operable to rotate the impeller rate of from 100 to 10,000 RPM.

6. The apparatus of Claim 1 wherein said gas vent is connected to a gas pump.

7. The apparatus of Claim 1 wherein said blood outlet port comprises a screen or mesh type particulate filter.

8. The apparatus of Claim 1 wherein said blood outlet port is positioned tangentially to said shell.

9. The apparatus of Claim 1 wherein the interior surfaces of said shell are coated with anti-thrombogenic materials.

10. The apparatus of Claim 1 wherein said blood inlet port is located higher than said blood outlet port.

11. The apparatus of Claim 1 wherein said blood inlet port is located lower than said blood outlet port.

12. The apparatus of Claim 1 wherein said gas vent is located higher than both said blood inlet port and said blood outlet port.

13. The apparatus of Claim 1 wherein said impeller is magnetically coupled to said motor drive.

14. The apparatus of Claim 1 wherein said impeller comprises a plurality of vanes to spin the blood.

15. The apparatus of Claim 1 wherein said impeller comprises a smooth outer surface to spin the blood using viscous effects.

16. The apparatus of Claim 1 wherein said gas vent further comprises a gas trap.

17. A method for removing bubbles from blood comprising the steps of:

pumping blood into an axially elongate vessel,

actively spinning the blood to create a centrifugal force on the blood, thereby collecting gas bubbles toward the center of the axially elongate vessel, and

removing a portion of the blood from the axially elongate vessel along the radial periphery of said vessel so as to minimize the gas bubble content of the blood.

18. The method of Claim 17, which includes the step of passing the blood through a particulate filter.

19. The method of Claim 17, further comprising the step of:

spinning the blood at a rate of between 100 and 10,000 revolutions per minute.

20. An apparatus adapted for removing gas bubbles from blood comprising:

a blood filter comprising a chamber and an impeller adapted to rotate within the chamber,

a motor drive,

a clamping mechanism to permit attachment of said blood filter to said motor drive,

wherein said blood filter is operable to actively rotate the blood by the motion imparted by the

impeller at speeds sufficient to cause gas bubbles to separate from the blood,

a vent in fluid communication with the chamber, whereby the separated gas bubbles exit the blood filter; and

an outlet port disposed on the radial periphery of the blood filter, whereby degassed blood exits the blood filter.

21. An system adapted for removing gas bubbles from blood, said system comprising:

a blood pump adapted for pumping blood;

a blood filter comprising a chamber characterized by a an upper region, a lower region, a central axis, a radially central region and a radially peripheral region and an impeller adapted to rotate within the chamber,

means for rotating the impeller about the central axis;

an inlet port in fluid communication with the blood pump, said input port communicating with the chamber in the lower region and radially peripheral region thereof;

an outlet port communicating with the chamber in the upper region and radially peripheral of the blood filter;

a vent in fluid communication with the radially central region of the chamber.

22. The system of claim 21 further comprising:

a venous blood reservoir for collecting venous blood from a patient, and means for establishing fluid communication from the patient's venous system and the blood reservoir; and

a fluid conduit connecting the vent to the venous blood reservoir, whereby blood entrained in the gas stripped from the blood in the chamber may be recovered and replaced into the system upstream of the blood filter.

23. The system of claim 21 further comprising:

means for releasably attaching the chamber to the means for rotating the impeller about the central axis; whereby the chamber may be discarded after use and the means for rotating may be re-used.